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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/585,761	06/02/2000	Thomas D. Barber	20.2743	5864

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EXAMINER	
CRAIG, DWIN M	

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 01/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/585,761	BARBER, THOMAS D.	
	Examin r	Art Unit	
	Dwin M Craig	2123	

-- Th MAILING DATE of this communication app ars on th cov r she t with th corr spond nc addr ss --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 9/3/2004.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) 2,11 and 20 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1, 2-10, 12-19 and 21-26 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 3-10, 12-19 and 21-26 have been presented fro reconsideration in view of Applicant's arguments and amended claim language. Claims 2, 11 and 20 have been cancelled.

Response to Arguments

2. Applicant's arguments presented in the response dated 9-30-2004 have been fully considered. The Examiner response is as follows.

2.1 As regards the Applicants response to the 35 U.S.C. 103(a) rejections of Claims 1-26, Applicant argued, *(from page 5 of the 9-30-2004 responses)*

> Thus, Strickland et al. is clearly limited to a modeling technique that uses simulated and actual data pertaining to the same tool. Expressly missing from Strickland et al. is any description of formation parameter calculation from a first well tool, modeling of log data representative of log data theoretically obtainable with a second well tool using the calculated parameter, and comparison of the log data obtained with the second well tool against the modeled log data.

The Examiner asserts that the claim language is unclear in the following manner, its is unclear to the examiner if the *calculating at least one parameter...using log data obtained with a first well tool disposed within the borehole,* is the same parameter used in the modeled log data that is used in the next step of Applicant's claims wherein *"modeling log data representative of log data theoretically obtainable with a second well tool disposed within a borehole from at least one calculated parameter."* To further clarify the Examiner's position, it is unclear if the *parameter* generated with a *first well tool* is the same *parameter* used in the calculations regarding the *second well tool.* The Examiner notes that the current claim language provides no clear linkage between the modeling and measuring of borehole data with the first log

tool and the monitoring and measuring of borehole data with the second log tool. The Examiner respectfully requests clarification and/or amendment in the next reply.

Again Applicant argued,

> Thus, Strickland et al. is clearly limited to a modeling technique that uses simulated and actual data pertaining to the same tool.

The Examiner has inferred that Applicant's argument stems from the concept that, *unlike the Strickland et al.* reference, Applicant's claims are directed towards simulated *(modeled)* and actual *(empirical)* data that is *correlated* between two well tools. The Examiner asserts that the current claim language does not *clearly* reflect the linkage between the data produced by the first well tool and the resultant data produced by the second well tool. Therefore the Examiner asserts that a reasonably broad interpretation of Applicant's amended claim language is that the multiple log tool data would be collected by an artisan of ordinary skill because of the desirability of collecting the same data using a different methods, *say laterolog vs. induction log,* so that quick confirmation can be made that the collected data accurately reflects the true status of the area in which future oil exploration will take place.

Applicant further argued,

> The Office Action suggests that it would have been obvious to one of ordinary skill in the art to combine Strickland et al. with Howells et al. because laterolog and induction measurement tools are known in the art and provide different measurement methods to determine the presence of oil. As explained above, these references (alone or combined) do not teach or suggest all the limitations of the claimed invention. Even if they had, Applicant does not believe that this broad allegation meets the requirement to provide a specific motivation to combine the references without the impermissible use of hindsight, *Interconnect Planning Corp. v. Feil et al. (CAFC) 227 USPQ 5431October 9, 1985.*

The Examiner respectfully traverses Applicants argument. The Applicant has opined that the Examiners combination is the result of *"impermissible hindsight."* Further, the Examiner notes that on page 547 of the cited U.S. Court of Appeals case...

"A claim may be invalid for obviousness under 35 U.S.C.§ 103 but still describe a combination not found in the prior art." (page 547 Interconnect Planning Corporation v. Feil et al. (CAFC) 227 USPQ 543 October 9, 1985.)

Further, the Examiner respectfully asserts that the *Howells et al.* reference does teach the use of, *"a second well tool"*, ***(Howells et al. U.S. Patent 4,556,884 Col. 25 Lines 45-49),*** *For example, the above-described system permits the simultaneous use of* ***two instruments*** *never run simultaneous in the prior art, mainly:* ***a dual*** *induction log, and* ***a dual*** *laterolog."* The Examiner notes that the terms *two* and *dual* clearly teach the use of a *second* or *dual* well tool.

As to the issue of motivation, the Examiner notes that in **Col. 7 Lines 45-49,** the *Strickland et al.* reference discloses, *"It is noted that the log data may be obtained by other methods, such as induction logging, wireline logging and laterologging."* Thus, the use of a second well tool is clearly implied by the *Strickland et al.* reference. The Examiner asserts that, lacking any claimed limitation that directly links the log data collected from the first well tool, to data later collected by a second well tool, the Applicants claims are obvious over the cited prior art.

The Examiner has found Applicant's arguments to be unpersuasive and upholds the earlier 35 U.S.C. 103(a) rejections of Claims 1, 3-10, 12-19 and 21-26.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Independent **Claims 1, 10 and 19** and dependent **Claims 3-9, 12-19 and 21-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Strickland et al. U.S. Patent 5,867,806** in view of **Howells et al. U.S. Patent 4,556,884.**

3.1 As regards independent **Claims 1, 10 and 19** the *Strickland et al.* reference discloses, a method of determining a characteristic of a subsurface earth formation surrounding a borehole **(Figures 1, 4A-C, 5-13, Col. 1 Lines 20-34),** calculating at least one parameter representative of a property of the formation using log data obtained with a first well tool **(Figure 2),** disposed within a bore hole **(Figure 1, Figure 4C ITEM 220),** modeling log data from at least one calculated parameter **(Figure 4C ITEM 226),** comparing log data against the modeled log data to determine the formation characteristic **(Figure 4B ITEM 218).**

However the *Strickland et al.* reference does not expressly disclose a second well tool disposed in the borehole.

The *Strickland et al.* reference discloses that there is a need in the art for a method to reduce *"shoulder effect"* **(Strickland et al. Col. 2 Lines 4-18).** An artisan of ordinary skill, would have been motivation to search the related borehole measurement art to find a method of

measuring resistive characteristics in order to over come the express deficiencies of the *Strickland et al.* reference in regards to teaching the use of a second well tool disposed in the borehole. In the borehole measurement art the *Howells et al.* reference discloses using a second well tool in the borehole **(Col. 25 Lines 37-49).**

Thus, it would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the borehole measurement methods of the *Strickland et al.* reference with the borehole measurement methods of the *Howells et al.* reference because, by combining the induction log and laterolog methods of measurement only one pass of the tool must be performed in order to get both types of measurements performed **(***Howells et al.* **Col. 25 Lines 50-68).**

3.2 As regards dependent **Claims 3, 12 and 21** the *Strickland et al.* reference discloses calculating a ratio **(Col. 12 Lines 16-22).**

3.3 As regards dependent **Claims 4, 13 and 22** the *Strickland et al.* reference discloses calculating a difference **(TABLE 1 and 2).**

3.4 As regards dependent **Claims 5 and 14** the *Strickland et al.* reference discloses multiplying by a factor **(Col. 17 Lines 60-65** *note, convolution is a form of multiplication***).**

3.5 As regards dependent **Claims 6, 7, 15, 16, 23 and 24** the *Strickland et al.* reference does not expressly disclose using a laterolog or induction type borehole-logging tool.

The *Howells et al.* reference discloses using a laterolog and induction type borehole logging tool in the borehole **(Col. 25 Lines 37-49).**

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have combined the teachings of the *Strickland et al.* reference with the

teachings of the *Howells et al.* reference because, the usage of the laterolog and induction type borehole measurement tools is known in the art and provides two different methods of measuring resistiveity of a borehole and therefore provides an improved method of determining the presence of oil **(*Howells et al.* Col. 6 Lines 51-54).**

3.6 As regards dependent **Claims 8, 17 and 25** the *Strickland et al.* reference discloses resistiveity **(Figure 4C ITEM 222).**

3.7 As regards dependent **Claims 9 and 18** the *Strickland et al.* reference discloses performing the measurements during drilling **(Figures 1, 1A and 2).**

3.8 As regards dependent **Claim 26** the *Strickland et al.* reference discloses storage device and a processor **(Figure 3, ITEM 110).**

Conclusion

4. Claims 1, 3-10, 12-19 and 21-26 have been presented for reconsideration in view of Applicants amended claim language and arguments. **Claims 1, 3-10, 12-19 and 21-26** have been rejected.

4.1 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- **U.S. Patent 5,583,825** discloses methods of modeling data for a borehole and presenting that data **(Figure 6).**
- **U.S. Patent 5,966,672** discloses a method of modeling borehole data using a 3-D presentation **(Figure 6).**

4.2 Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwin M Craig whose telephone number is (571) 272-3710. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on (571)272-3716. The fax phone number for the organization where this application or proceeding is assigned is 703-308-1396.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMC

KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER